

ED 367 308

IR 016 583

AUTHOR Farr, Marshall J., Ed.; Psotka, Joseph, Ed.
 TITLE Intelligent Instruction by Computer: Theory and Practice.
 REPORT NO ISBN-0-8448-1687-6
 PUB DATE 92
 NOTE 279p.
 AVAILABLE FROM Taylor & Francis, Inc., 1900 Frost Road, Bristol, PA 19007-1598 (\$35).
 PUB TYPE Books (010) -- Collected Works - General (020) -- Reports - Evaluative/Feasibility (142)
 EDRS PRICE Document Not Available from EDRS.
 DESCRIPTORS *Artificial Intelligence; Cognitive Structures; *Computer Assisted Instruction; Computer Simulation; Elementary Education; Heuristics; Higher Education; Hypermedia; Instructional Design; *Instructional Development; *Instructional Systems; Learning Processes; Models; *Training Methods; Transfer of Training
 IDENTIFIERS *Intelligent CAI Systems; Intelligent Tutoring Systems; Interactive Systems; *Knowledge Representation

ABSTRACT

The essays collected in this volume are concerned with the field of computer-based intelligent instruction. The papers are organized into four groups that address the following topics: particular theoretical approaches (3 titles); the development and improvement of tools and environments (3 titles); the power of well-engineered implementations and evaluations (5 titles); and implications for future research and development (1 title). The collection includes a preface entitled, "A Thematic Introduction to Intelligent Instruction: Progress toward Practice" (Marshall J. Farr and Joseph Psotka), and the following papers: (1) "Apprenticeship Training in the Workplace: Computer-Coached Practice Environment as a New Form of Apprenticeship" (Susanne P. Lajoie and Alan Lesgold); (2) "Automated Tutoring in Interactive Environments: A Task-Centered Approach" (Ursula Wolz, Kathleen R. McKeown, and Gail E. Kaiser); (3) "Explanation, Analogy, and Transfer in an Intelligent Tutoring System Paradigm" (Peter Pirolli); (4) "Control for Intelligent Tutoring Systems: A Comparison of Blackboard Architectures and Discourse Management Networks" (William R. Murray); (5) "Two Approaches to Simulation Composition for Training" (Douglas M. Towne and Allen Munro); (6) "Integrating Intelligent Tutoring, Computer-Based Training, and Interactive Video in a Prototype Maintenance Trainer" (Mark L. Miller and Scott R. Lucado); (7) "Semantically Constrained Exploration and Heuristic Guidance" (Henry Hamburger and Akhtar Lodgher); (8) "Transfer, Adaptation, and Use of Intelligent Tutoring Technology: The Case of Grace" (Wayne D. Gray and Michael E. Atwood); (9) "Design, Development, and Implementation of an Intelligent Tutoring System for Training Radar Mechanics To Troubleshoot" (Laura C. Kurland, Robert Alan Granville, and Dawn M. MacLaughlin); (10) "Intelligent Conduct of Fire Trainer: Intelligent Technology Applied to Simulator-Based Training" (Denis Newman, Mario Grignetti, Mark Gross, and L. Dan Massey); (11) "An Intelligent System for Training Space Shuttle Flight Controllers in Satellite Deployment Procedures" (R. Bowen Loftin, Lui Wang, Paul Baffes, and Grace Pua); and (12) "An

Emerging Technology Gears Up" (Elliot Soloway). All of the articles contain references. (JLB)

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